



Bridgebay
Investment Consulting Services



Maximizing Investment Returns on Balance Sheet Assets: Liquidity Tiering Techniques

Mary Ellen Mullen, CFA
Principal, Bridgebay Consulting, LLC
(425) 747-1924
email: mullen@bridgebay.com
www.bridgebay.com

Thursday, January 17, 2007





	Section	Page
I	Liquidity Assessment	3-4
II	Portfolio Tiering	5-10
III	Selection of External Managers	11-13
IV	Investment Policy	14-15
V	Custody Bank	16
VI	Reporting and Performance Reviews	17-24
VII	Securities Lending	25-26
VIII	Corporate Governance	27

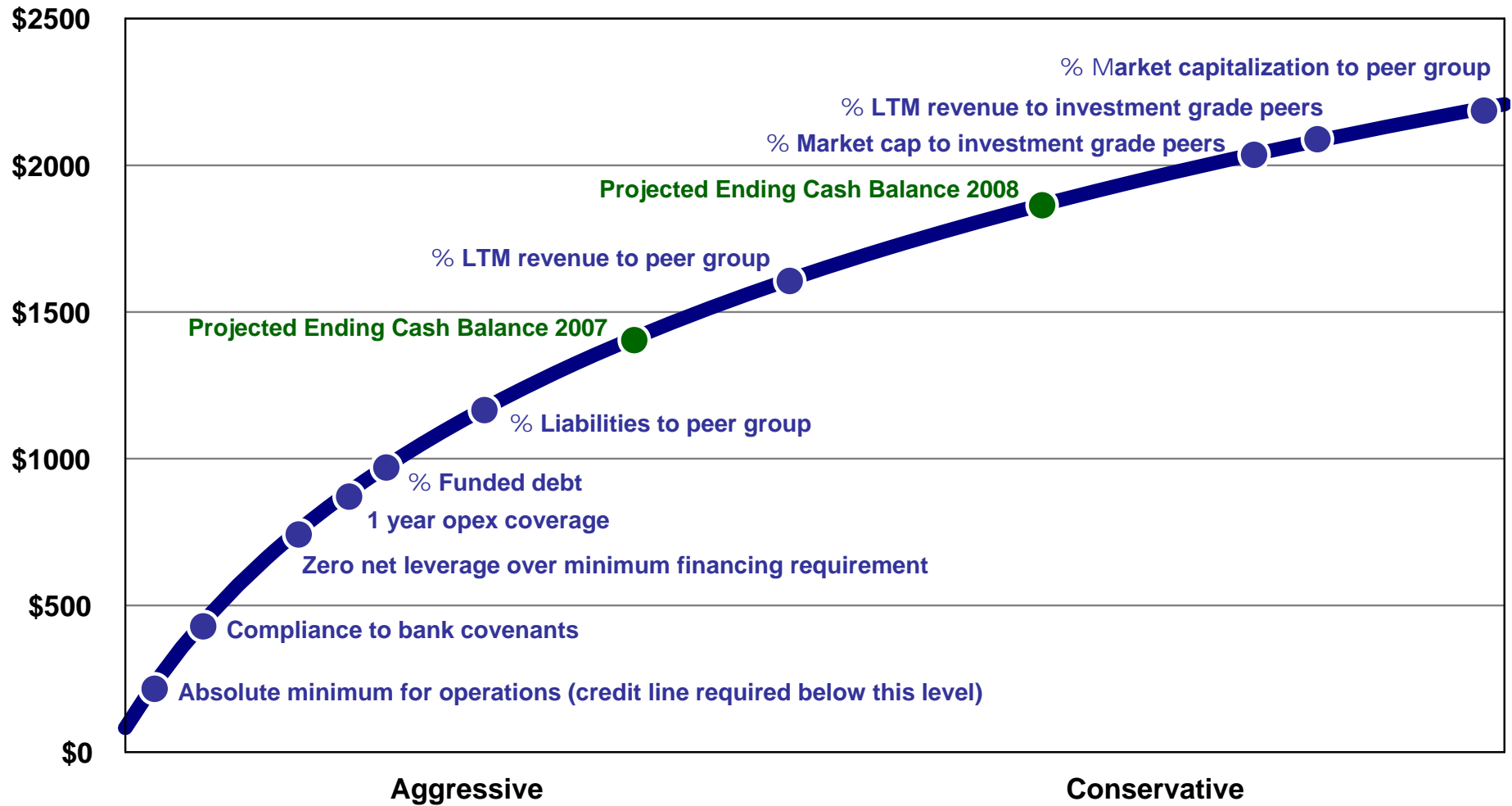


- Strategic Investment Plan
 - M & A activity
 - Stock repurchase
 - Capital expenditures
 - Unexpected liquidity needs
 - Maximize interest income

**Excess
Cash**

vs.

**Operational
Flexibility**





- ▶ **Multiple managers with the same guidelines leads to:**
 - Diminished risk management
 - Inadvertent sector concentrations
 - Suboptimal returns
- ▶ **Broad multiple sector allocations**
 - Can dampen overall volatility
 - Optimize return
 - Increase diversification
- ▶ **Mix of investment strategies with low correlations**
 - Offset each other in adverse market movements
 - Reduce overall risk and maximize returns

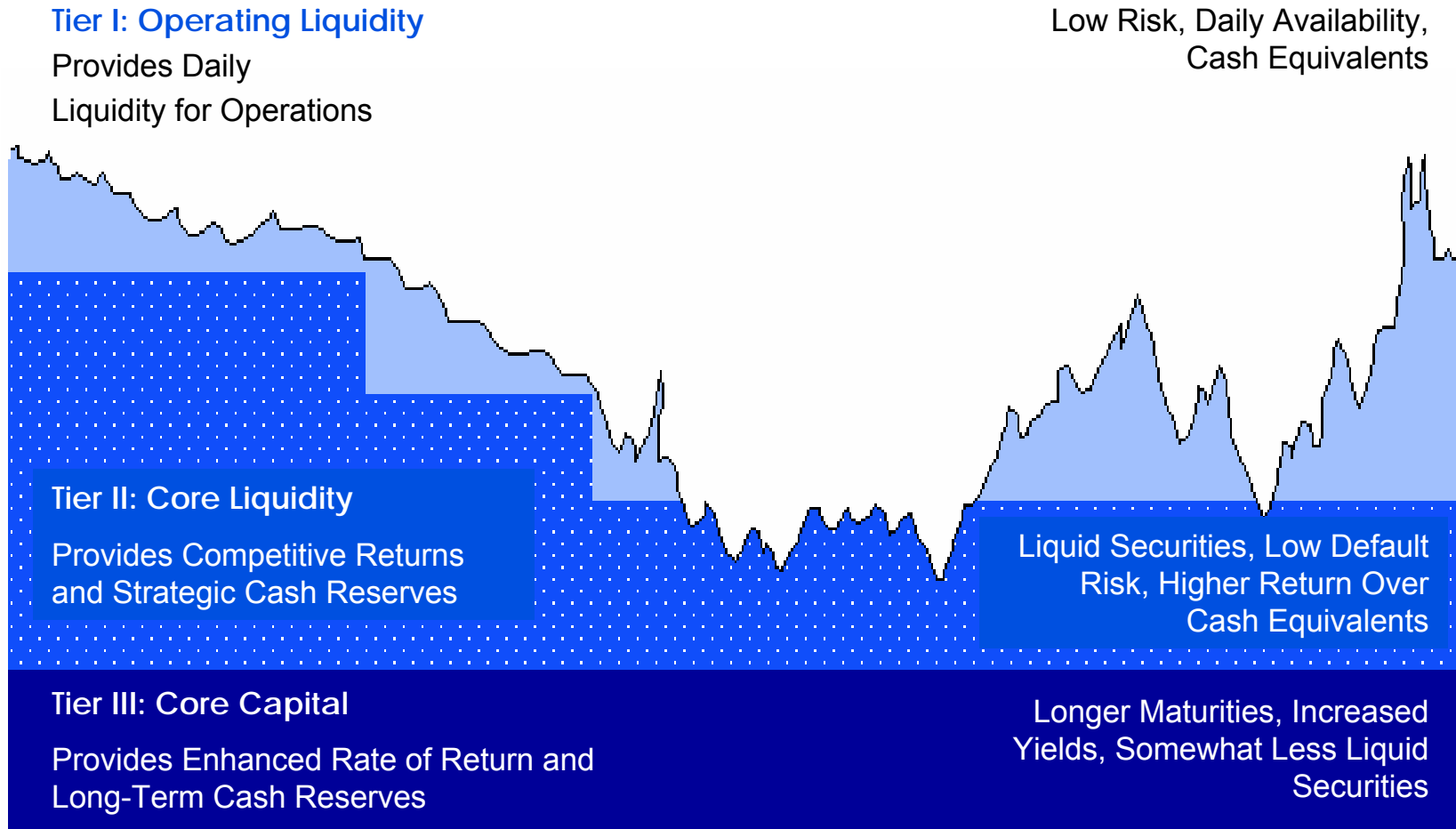


Balance Sheet Cash Tiering

- ▶ Define cash pools by investment horizon
- ▶ Determine objective of each investment tier
 - Liquidity or return
 - Priorities differ by investment horizon
 - Return of capital is always an objective
- ▶ Develop benchmark for each tier
 - Market driven indices
 - Duration of benchmark similar to duration of investment tier
 - Underlying instruments and credits exist
 - Easy to calculate, verifiable
- ▶ Back-up or replacement money managers pre-approved



Each Tier is Distinct and Benchmarkable





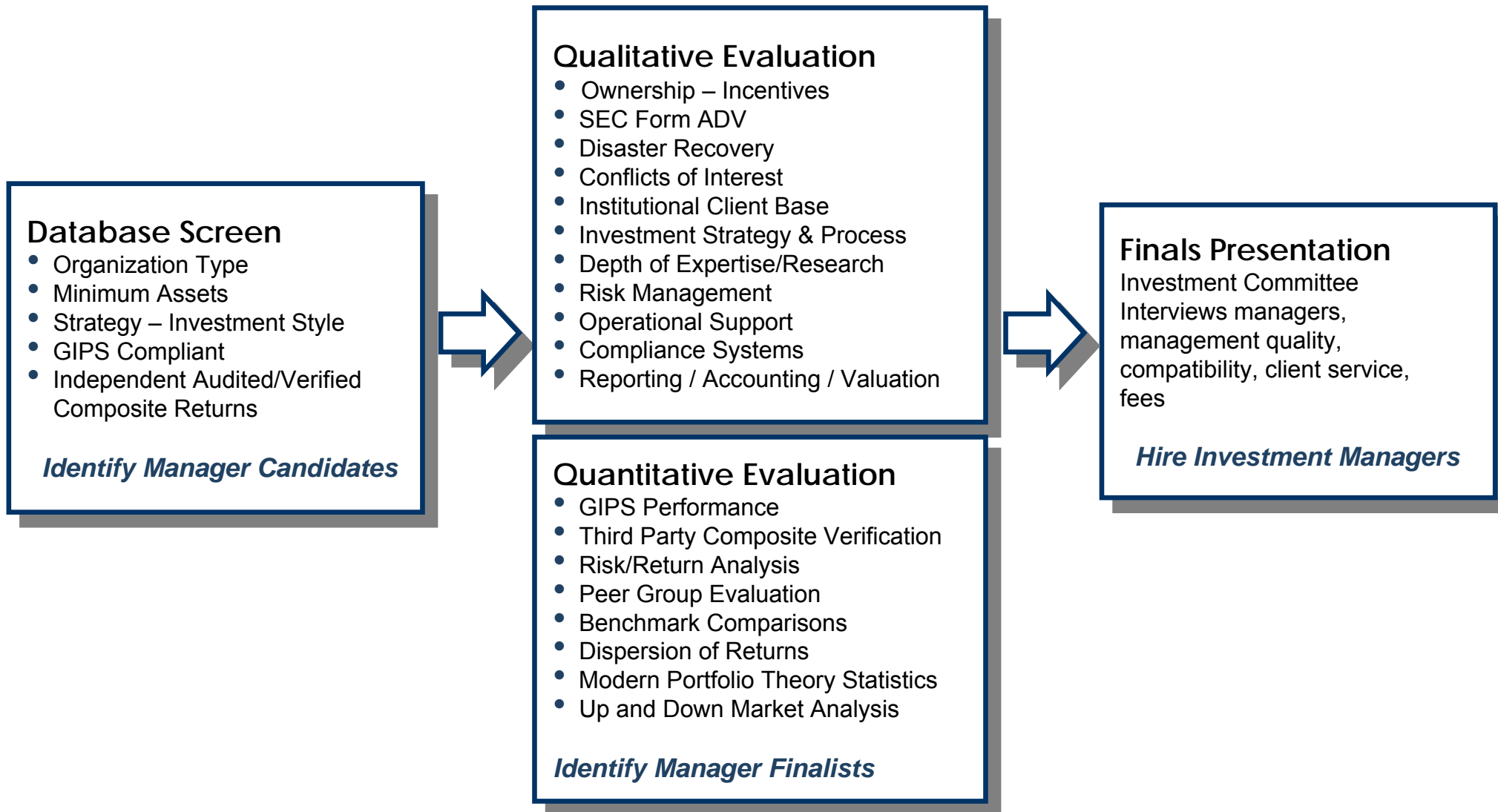
- ▶ **Defined minimum balance**
 - Size driven by historical analysis of maximum daily need adjusted for non-operating cash items
- ▶ **Money Fund and Enhanced Cash Vehicles**
 - Returns outperform sweep account
 - Portal gives access to multiple funds
 - iMoneyNet portal evaluation
 - Taxable and non-taxable funds
- ▶ **Immediate availability for Money Fund**
- ▶ **Delayed availability for Enhanced Cash**
 - Potential principal or NAV fluctuation
- ▶ **Sweep accounts to ensure no idle cash balances**



- ▶ **Outperforms Money Market Fund**
- ▶ **Provides liquidity source for M & A, stock buyback and unexpected cash requirements**
- ▶ **Managed by SEC-registered investment advisors (or In-House)**
- ▶ **Strict investment process**
 - Documented controls and segregation of duties
 - NASD broker check
 - Third party performance calculation & strategy review
 - Credit review conducted by third party included in compliance report
- ▶ **Benchmark: 6 month to 1 year duration**
 - Blended 3 month Money Market + 12 month Corporate Indices



- ▶ **Managed by SEC-registered investment advisors**
 - Increased mark-to-market risk through increased credit exposure
 - Trading allowed with realized loss limits
- ▶ **No target balance**
- ▶ **Objectives in order of priority**
 - Increased returns, preservation of capital, then liquidity
 - Maximize returns through complex securities, credit and longer duration
- ▶ **Benchmark: 2+ year duration target**
 - Taxable Benchmark
 - Blended 3-month Money Market + 1-3 year Corporate Indices
 - Tax-exempt Benchmark
 - Blended 1-5 year Municipal Indices





- ▶ **Independent accountants' report of investment manager composite**
 - Verification letter of composites as set forth by GIPS® (formerly AIMR-PPS®)
 - Investment Manager “complied with all the composite construction requirements of the Global Investment Performance Standards GIPS® on a firm-wide basis for the period from January 1, 2006 to December 31, 2006, and designed its processes and procedures to calculate and present performance results in compliance with the GIPS® as of December 31, 2006.”

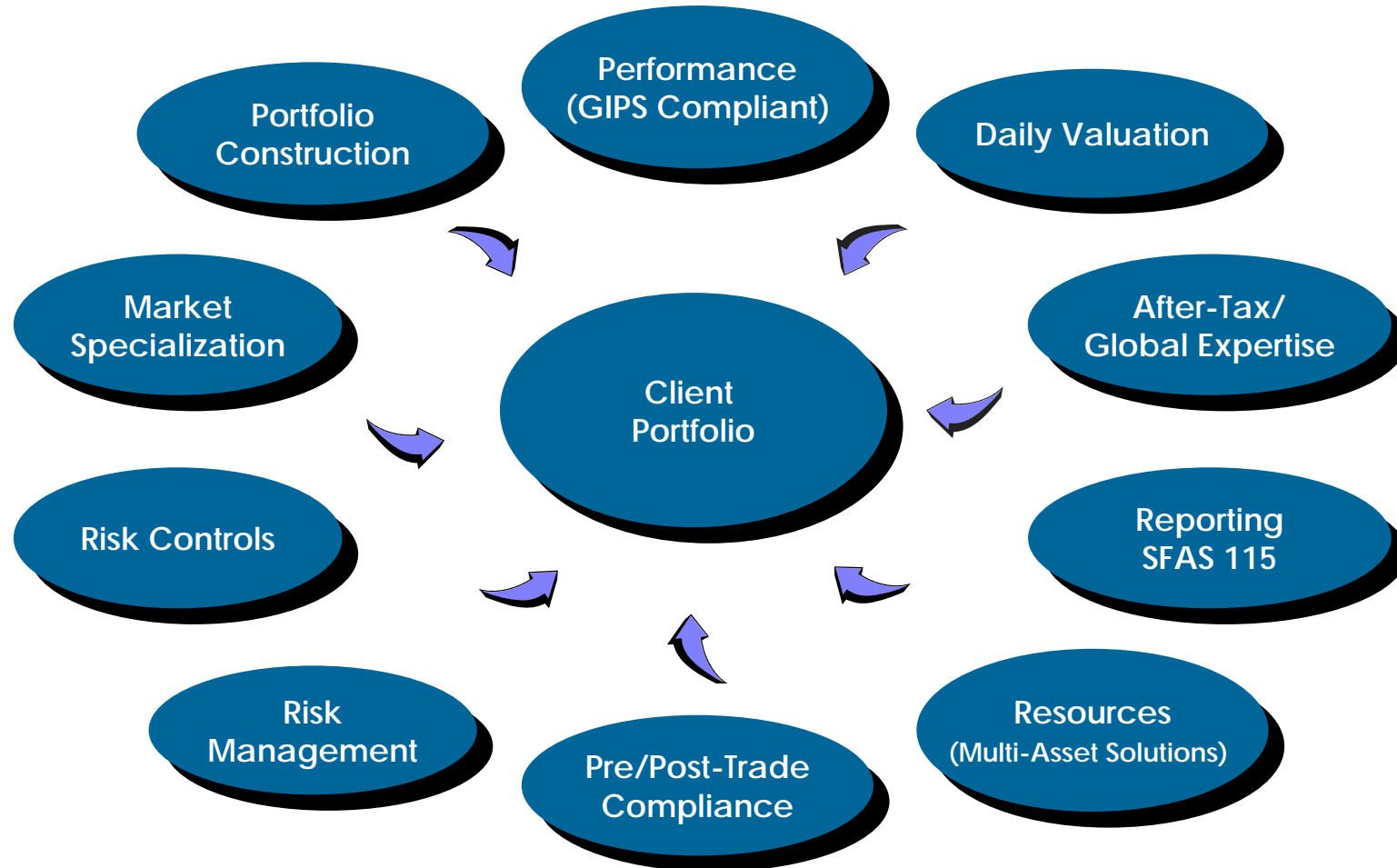
- ▶ **SAS 70 Report**
 - Auditing firm's experience in conducting SAS 70 reports for other firms

- ▶ **SEC Form ADV or IAPD (Investment Adviser Public Disclosure)**
 - http://www.adviserinfo.sec.gov/IAPD/Content/Search/iapd_OrgSearch.aspx

- ▶ **NASD Broker-Check**
 - http://www.nasd.com/InvestorInformation/InvestorProtection/NASDW_005882

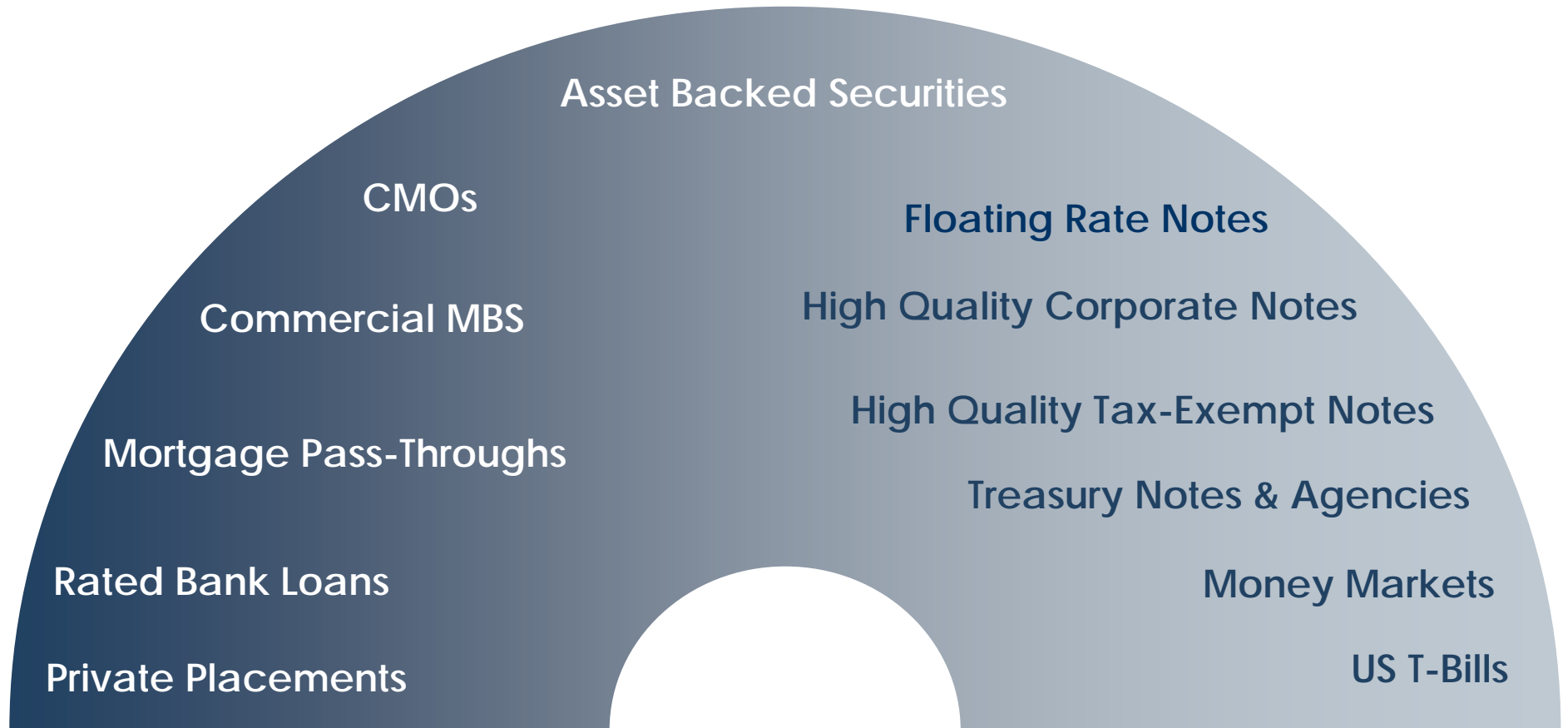


SEC Form ADV Part II





- ▶ **Audit Committee approved**
 - Reviewed annually
- ▶ **Defined list of discrete responsibilities and authorizations**
- ▶ **Policy contains specific guidelines and limitations**
 - Eligible instruments
 - Sector exposure limits
 - Maximum issuer limits
 - Maximum effective maturity / duration
 - Maximum weighted average maturity / duration
 - Minimum credit ratings, split ratings
 - Maximum country limits by credit rating
 - Maximum net realized loss budget
 - Ongoing unrealized loss tracking

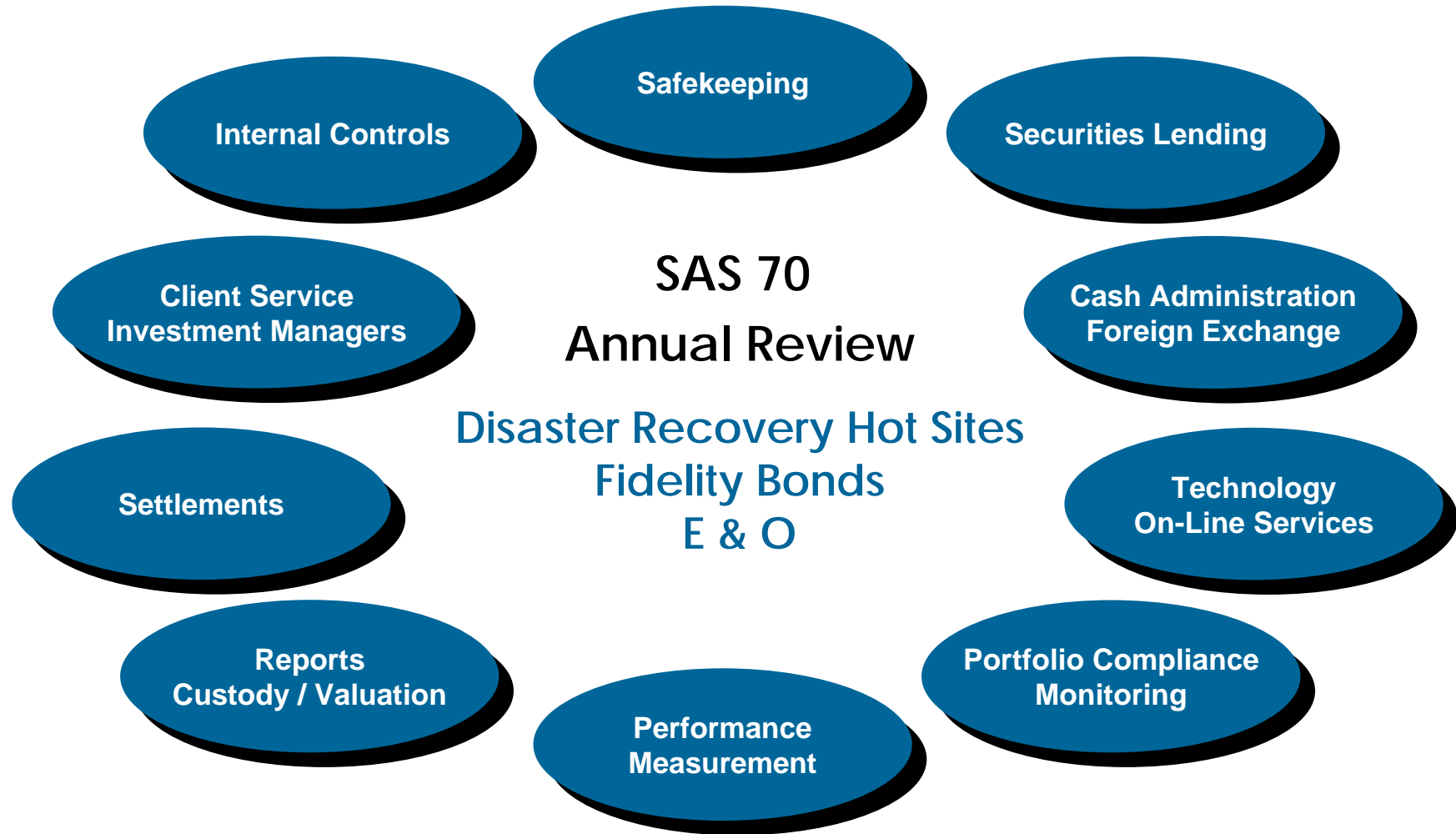


Income/Return Investments

- Less Efficient Markets
- Adequate Liquidity
- Spread Fluctuations

Liquidity Investments

- Highly Efficient Markets
- Superb Liquidity
- Minimal Spread Volatility





- ▶ **Custodian provides accounting and reporting**
 - Ensures consistency across all portfolios
 - SAS 70 type II certified by experienced auditing firm

- ▶ **Third party investment consultant (SEC Form ADV) review by portfolio and consolidated**
 - Monthly, quarterly and annual total return
 - Average credit rating
 - Individual Exposures
 - Credit rating
 - Maturity/duration
 - Security sector
 - Attribution analysis - Factors contributing to performance vs. benchmark
 - Duration
 - Sector
 - Yield curve positioning
 - Security selection

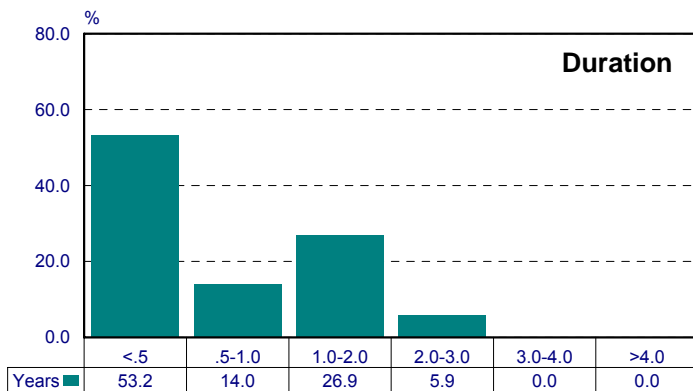
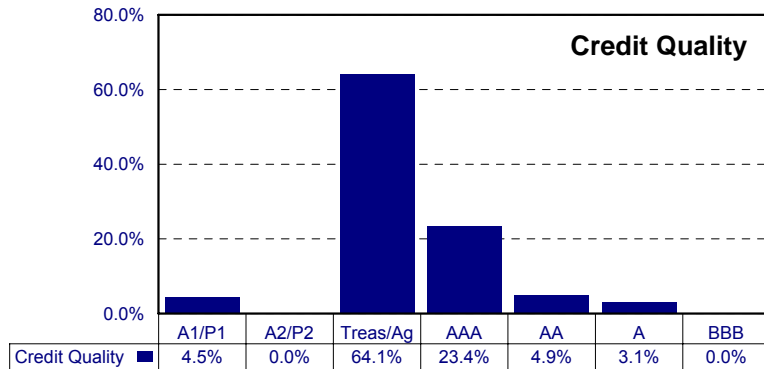
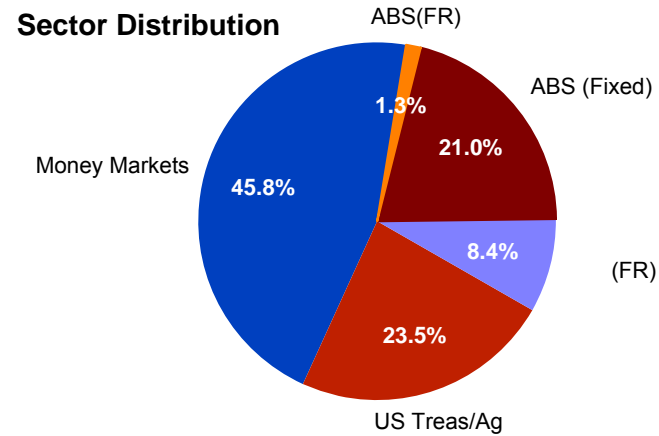
- ▶ **Conduct forward-looking scenario analysis**
 - Interest rate shift +/- 50bps., 100bps, under different yield curve shapes
 - Yield curve volatility
 - Impact on unrealized losses
 - Forecast interest income with book yield



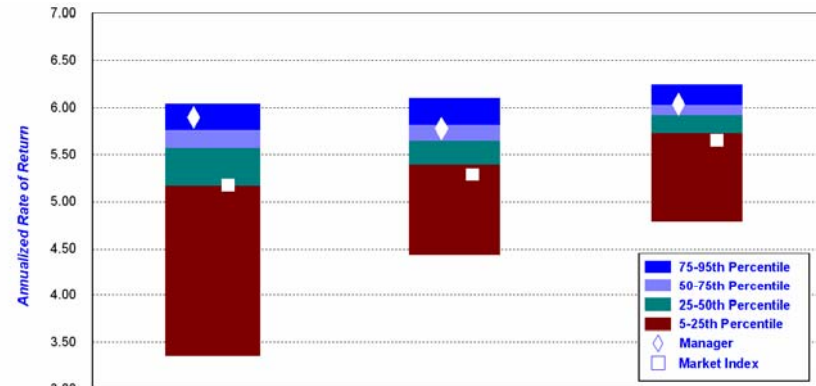
- ▶ **Quarterly meeting with third party investment consultant (SEC Form ADV) to review all portfolios and with each external manager**
 - Face-to-face meeting at least once every 6-months
 - Review performance for quarter, YTD and since inception
 - Discuss macro economic assumptions impacting strategy
 - Review strategy or changes to strategy
 - Opportunities and resulting realized losses
 - Potential changes to investment policy
 - Changes in portfolio or firm management personnel
 - Affiliations with hedge funds
 - Manager and personnel changes
- ▶ **Formal agenda sent to managers in advance of meeting and managers required to provide presentation materials**



Manager A as of June, 2004	
Portfolio Market Value (\$000)	727,662
Average Credit Quality	Aa2
Average Duration (Years)	0.98



Universe Comparison Risk Adjusted Returns



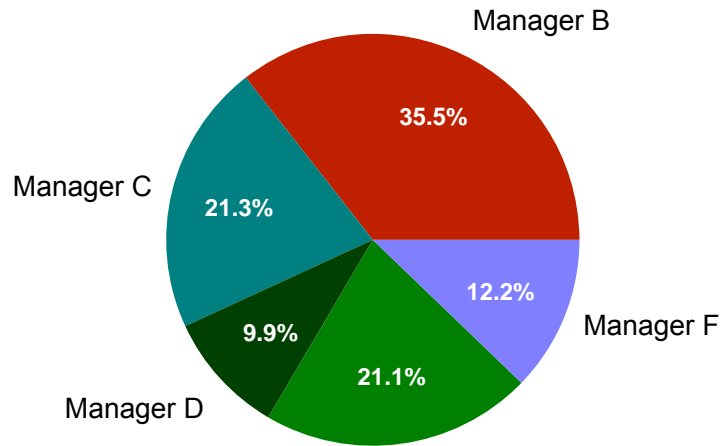
	3 Years	5 Years	7 Years
Maximum	6.10	6.20	6.37
75th Percentile	5.89	5.94	6.15
Median	5.70	5.77	6.03
25th Percentile	5.28	5.52	5.85
Minimum	3.46	4.54	4.90
Manager E	6.05	5.82	6.15
Market Index	5.28	5.37	5.78
Custom Benchmark	5.88	5.77	6.08

Simulated data. Not representative of Client holdings or investments.

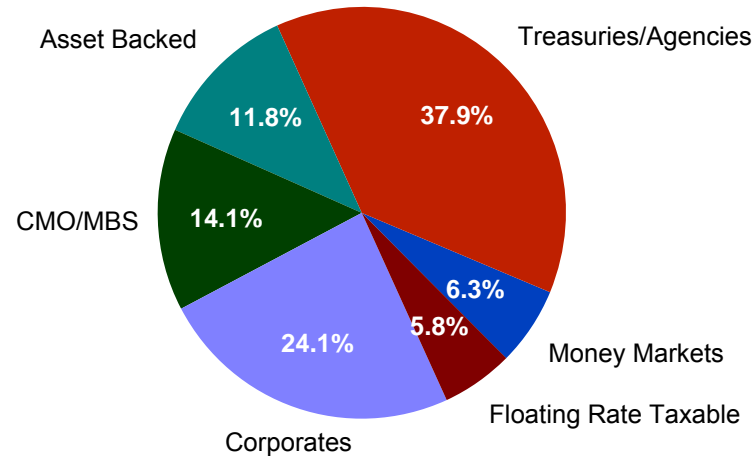


Asset Distribution by Manager

Percentage of Portfolio Market Value



Consolidated Sector Distribution



Sensitivity Analysis

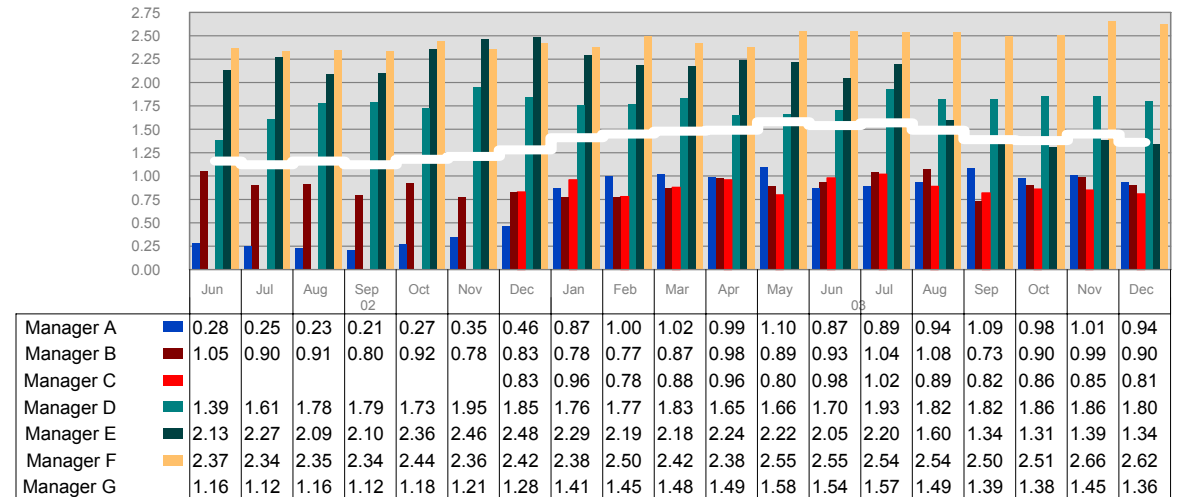
Change in Interest Rates

	No Change		Increase 50 bps.		Increase 100 bps.		Increase 150 bps.	
	6 mos	12 mos	6 mos	12 mos	6 mos	12 mos	6 mos	12 mos

Portfolio

Horizon Return	1.60%	3.20%	1.13%	2.25%	0.65%	1.30%	0.18%	0.35%
Income Return	1.60%	3.20%	1.60%	3.20%	1.60%	3.20%	1.60%	3.20%
Market Return	0.00%	0.00%	-0.48%	-0.95%	-0.95%	-1.90%	-1.43%	-2.85%
Beginning Fair Market Value	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Ending Fair Market Value	\$101,600	\$103,200	\$101,125	\$102,250	\$100,650	\$101,300	\$100,175	\$100,350

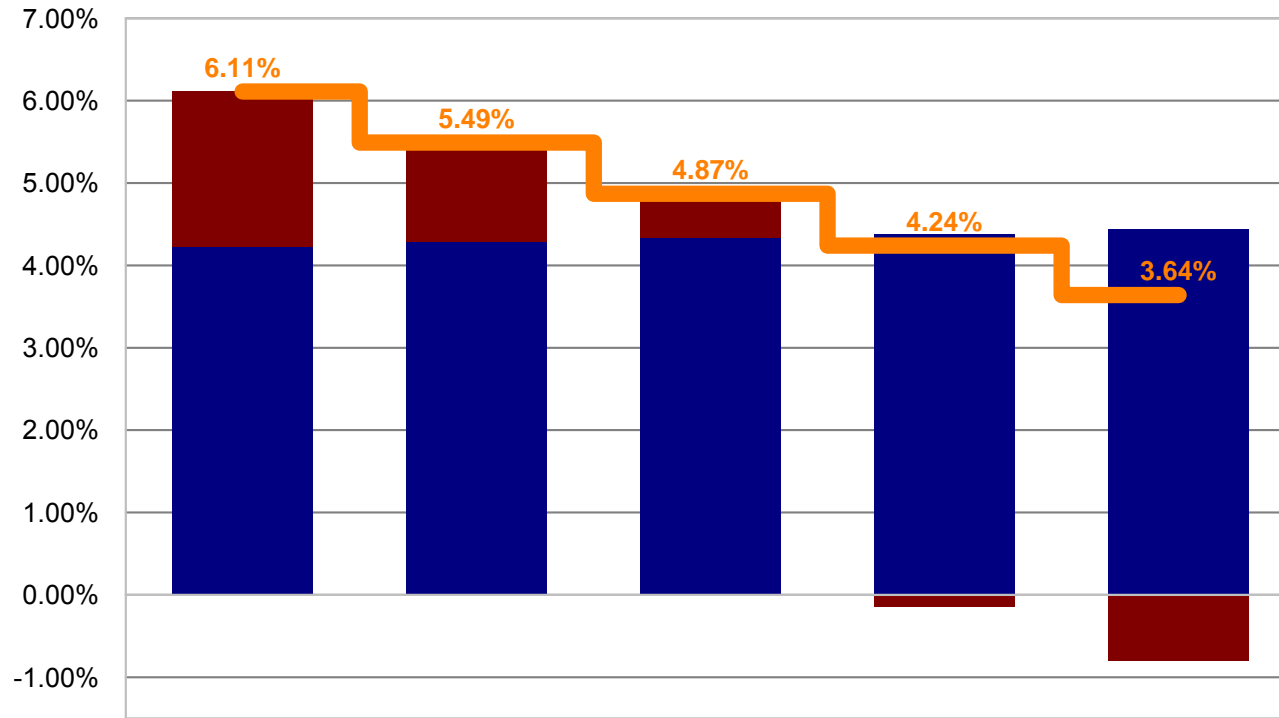
Duration - Manager Comparison



Simulated data. Not representative of Client holdings or investments.



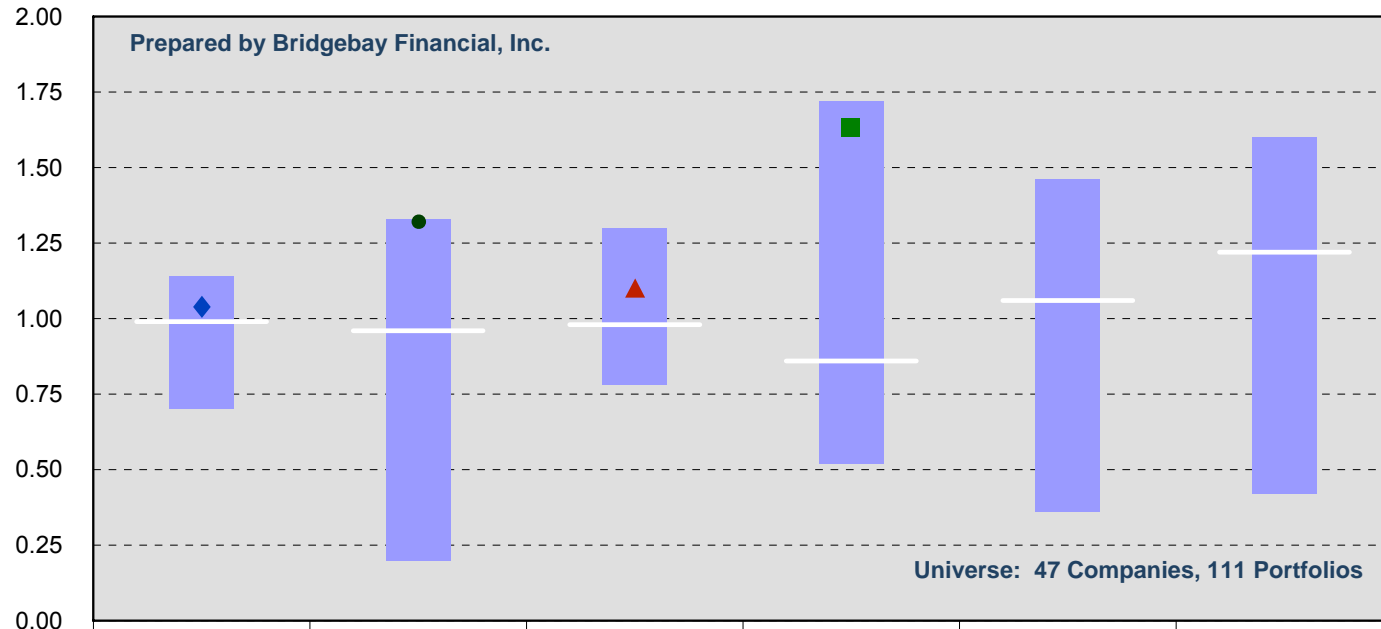
Impact of interest rate changes over next 12 months



1.7 Year Duration	-100 bps	-50 bps	No Change	50 bps	100 bps
Income	4.22%	4.28%	4.34%	4.38%	4.44%
Principal	1.89%	1.21%	0.53%	-0.14%	-0.80%
Total Return	6.11%	5.49%	4.87%	4.24%	3.64%



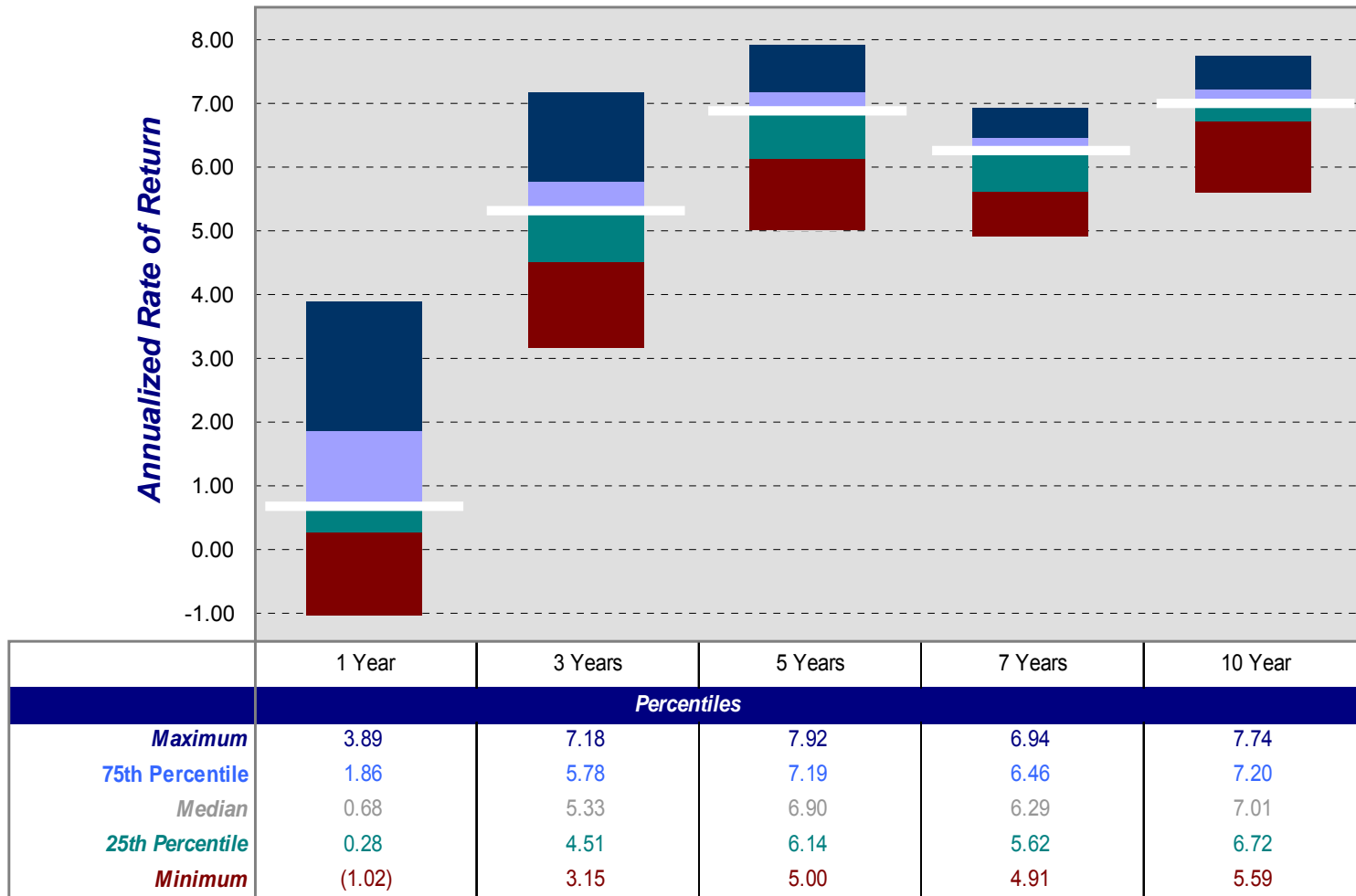
Returns by Duration Strategy



	0.50 Years	1.00 Years	1.25 Years	1.50 Years	1.70 Years	2.25 Years
High	1.14	1.33	1.30	1.72	1.46	1.60
Low	0.70	0.20	0.78	0.52	0.36	0.42
Average	0.99	0.96	0.98	0.86	1.06	1.22
Manager A	1.04					
Manager B			1.10			
Manager C		1.32				
Manager D				1.63		
Number of Portfolios	32	26	17	10	16	10



Range of Annualized Returns





Red Flags

- ⌘ High transaction volume
- ⌘ Change in portfolio quality or credit quality drift
- ⌘ Increase in securities with negative outlook or credit watch
- ⌘ Increased concentrations by issuer
- ⌘ Exceptions to policy
- ⌘ Use of leverage such as reverse repos
- ⌘ Dramatic duration changes
- ⌘ Negative convexity
- ⌘ Strange yield to maturity numbers by security
- ⌘ Size of paydowns on MBS or ABS increase



- ▶ An incremental way, if properly managed, to enhance total return on portfolio securities
- ▶ Securities lending conducted through custodian
- ▶ Indemnification by custodian
- ▶ Investment strategy to earn revenue on existing assets
- ▶ Global business approximately \$3 Trillion on loan
- ▶ Securities lending provides liquidity to financial markets
- ▶ Can add incremental income in a risk-controlled framework



- ▶ **Counterparty Default**
 - ▶ Diligence in Counterparty Selection
 - ▶ Risk-Adjusted Exposure Monitoring
 - ▶ Diversification
 - ▶ Collateral Maintenance: 102% & 105%
 - ▶ Indemnification

- ▶ **Asset/Liability Management**
 - ▶ Investment Management Expertise
 - ▶ Interest Rate & Liquidity Management
 - ▶ Credit Analysis Expertise

- ▶ **Cross Border Risk**
 - ▶ Legal / Tax due diligence process

- ▶ **Operational Risk**
 - ▶ Documented procedures and policies
 - ▶ Segregated Compliance Officers
 - ▶ Integrated System Links with Custodian
 - ▶ Reporting Transparency



- ▶ **Quarterly review of portfolio performance**
 - Market environment
 - Projected liquidity needs
 - Yield curve changes
 - Returns analysis
 - Total return and book return
 - Taxable vs. tax-advantaged
 - Portfolio and manager
 - Adherence to critical components of investment policy
- ▶ **Investment policy reviewed annually**
- ▶ **Money managers reviewed annually**
- ▶ **Custodian capabilities reviewed annually**